National Institute of Environmental Health Sciences

A study on Aspergillus species in houses of asthmatic patients from Sari City, Iran and a brief review of the health effects of exposure to indoor Aspergillus

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Abstract:

To study the distribution of Aspergillus spp. in outdoor and indoor air of asthmatic patients' houses, as well as a review on the health effects of exposure to indoor Aspergillus. Open plates containing malt extract agar media were used to isolate fungi from the indoor (nEuro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin)360) and outdoor (nEuro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin)180) air of 90 asthmatic patients' houses living in Sari City, Iran. Plates were incubated at room temperature for 7-14 days. Cultured Aspergillus spp. were identified by standard mycological techniques. All culture plates grew fungi, a testament to the ubiquitous nature of fungal exposure. Cladosporium spp. (29.2%), Aspergillus spp. (19.0%), and Penicillium spp. (18.3%) were most common inside the houses while Cladosporium spp. (44.5%), Aspergillus spp. (12.4%), and Alternaria spp. (11.1%) were most common outside the houses. Aspergillus flavus (30.1%) and A. fumigatus (23.1%) are the most commonly isolated species in indoor air. Aspergillus flavus (44.5%) and A. fumigatus (42.6%) were the most prevalent Aspergillus spp. outside. The most colony numbers of Aspergillus were isolated from kitchens (30.4%) and the least from bedrooms (21.1%). Aspergillus flavus was the most prevalent specie in all sampled rooms except in the kitchen where A. fumigatus was the most common. Aspergillus flavus is the most prevalent species among the Aspergillus spp. in the indoor and outdoor of a warm climate area. In these areas, A. flavus can be a major source of allergen in the air. Therefore, minimizing indoor fungal exposure could play an important role in reducing allergic symptoms in susceptible persons. © 2009 Springer Science+Business Media B.V.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Indoor Environment

Air Pollution: Allergens

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: Other Asian Country

Other Asian Country: Iran

Health Impact:

specification of health effect or disease related to climate change exposure

Respiratory Effect

Respiratory Effect: Asthma

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified